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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/785,402	02/20/2001	Noboru Takachio	032590-084	2048

7590 01/26/2005
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EXAMINER

PAYNE, DAVID C

ART UNIT PAPER NUMBER

2633

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/785,402

Applicant(s)

TAKACHIO ET AL.

Examiner

David C. Payne

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 2-14, 17-21, 25-33, 35-38 and 40-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 15, 16, 22-24, 34 and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 17 September 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

1. Claims 2-14, 17-21, 25-33, 35-38 and 40-45 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 17 September 2004.
2. The Examiner accepts the applicant's suggestion for the elimination of Species H, the grouping of Species J, K, and L into one Species, the grouping of Species M and N into one Species.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1, 15, 16 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pan US 6,147,786 (Pan).

Re claim 1

Pan disclosed (*Figure 1*)

An optical wavelength division multiplexing network having a structure comprising at least two layers, a highest level network being a ring network (*see Figure 1, SDH & Video Trunk WDM SHR*) which comprises at least one center node (*see Figure 1, Primary HE & CO*) and two or more remote nodes (20) which are joined by at least two optical fibers; said lowest level network comprising a star network centered around an access node which multiplexes traffic from one or a plurality of optical network units (ONU) (*Figure 4, ONU*), said ONU and said access node being directly joined by at least one optical fiber; said remote nodes amplifying optical wavelength division multiplexing signals which are transmitted on an optical fiber comprising the higher level network which said remote nodes belong to (*e.g., col./line: 3/29-35*), branching the signals to an optical fiber comprising the lower level network, and coupling optical wavelength division multiplexing signals, input from an optical fiber comprising the lower level network, to optical wavelength division multiplexing signals transmitted on an optical fiber comprising said higher level network, and amplifying the coupled signals; said access node amplifying the optical wavelength division multiplexing signals transmitted from said optical fibers which comprise the higher level network which said access node is connected to (*e.g., col./line: 3/20-35*), selecting optical signals having wavelengths which correspond to said ONU, and outputting the selected signals to said ONU ($\lambda_1, \lambda_2, \text{etc.}$); multiplexing said optical signals transmitted from said ONU, dividing the multiplexed signals in a plurality of directions, amplifying the divided signals, and transmitting the amplified signals to an optical fiber comprising a higher level network

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which said access node is connected to; and the center node belonging to said highest level network and said ONU establishing a direct communication path by using lights of different wavelengths, the optical signals being amplified, branched, and routed at said remote nodes and said access node provided there between.

It is not entirely clearly by what the applicant claims

"in the case where the layered structure comprises three or more layers, nodes belonging to said ring network being joined by at-least two optical fibers

excepting the lowest level network the intermediate level network comprising a ring having said node belonging to the highest level network as its center node"

Pan does not describe his invention in terms of intermediate layers. However, one of ordinary skill in the art at the time of invention would consider the Pan's first ring network a highest level network, Pan's second ring network an intermediate ring and the ONU network a lowest level network based on a progression of signals from the end user to the Master HE & DXC shown in Figure 1.

Re claim 15

Pan disclosed at least two optical fibers (*e.g.*, *col./line: 4/10-15*).

Re claims 16

Pan disclosed at least four optical fibers (*e.g.*, *col./line: 5/1-15*).

Re claims 22, 24

Pan did not disclose using radio to double the communication the communication.

However, Pan did disclose communication between the ONU and access nodes simultaneously in both analog and digital, whereas the video signal is understood to be a

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radio signal.

Re claims 23

Pan did not disclose said optical multiplexer/de-multiplexer provided at said access node being provided at a remote terminal instead (*Figure 1 (28)*).

6. Claims 34 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pan US 6,147,786 (Pan) in view of Gnauck et al. US H2075 H (Gnauck).

Re claims 34 and 39

Pan disclosed the aforementioned invention.

Gnauck does not disclose and the node apparatus connecting to a lowest level network having wavelength selectability; said node apparatus which becomes the final multiplexing destination of traffic comprising: a plurality of optical de-multiplexers which de-multiplex optical wavelength division multiplexing signals, input from optical fibers comprising said highest level network, to optical signals at each wavelength; a plurality of optical receivers which convert the optical signals which have been de-multiplexed by said optical de-multiplexers to electrical signals; a plurality of selectors which selectively output either of the outputs from said plurality of optical receivers; a signal termination section which performs predetermined electrical processing to the electrical signals which have been selected by said selectors, and outputs a plurality of groups of electrical signals; a plurality of optical senders which convert the electrical signals output from the signal termination section to a plurality of optical signals having different wavelengths; and a plurality of optical multiplexers which multiplex the optical signals output from said optical senders, and output the multiplexed signals to optical fibers

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comprising said highest level network.

Gnauck disclosed (*Figure 26*) a plurality of optical senders (*lasers*), receivers, multiplexer (2622), demultiplexer (2621), and optical to electronic termination (2670).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the components of Gnauck at the termination points in Pan for the benefit of both converting the optical signals into usable processing form and producing lightwave signals for transmission on the ring.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

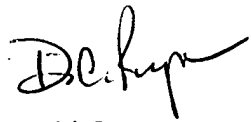
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp

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A handwritten signature in black ink, appearing to read "D.C. Payne", written in a cursive style.

David C. Payne
Patent Examiner
AU 2633